CLAIMS:

1. Use of colloid-osmotically effective macromolecules for preparing an injectable aqueous solution of at least one pharmaceutically active ingredient for its painless introduction into vessels of the human or animal body.

2. Use of colloid-osmotically effective macromolecules for preparing an injectable aqueous solution of at least one pharmaceutically active ingredient for its tissue-saving introduction into vessels of the human or animal body.

3. Use of colloid-osmotically effective macromolecules for preparing an injectable aqueous solution of at least one pharmaceutically active ingredient for reducing the diffusion of said pharmaceutically active ingredient through the walls of injection vessels of the human or animal body.

4. The use according to any of claims 1 to 3, characterized in that said macromolecule is selected from the group consisting of polysaccharides, modified polysaccharides, peptides and modified peptides, and albumins.

5. The use according to claim 4, characterized in that said polysaccharide is selected from the group consisting of cellulose, starch and dextrane.

6. The use according to claim 4, characterized in that said modified polysaccharide is hydroxyethylstarch [poly(O-hydroxyethyl)starch].

7. The use according to claim 6, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4.

8. The use according to claim 6, characterized in that said hydroxyethylstarch has an average molecular weight of below 300,000.

EXHIBIT A

Claims 1-77 as amended on April 24, 2001

9. The use according to claim 6, characterized in that said hydroxyethylstarch has an average molecular weight of below 70,000.

10. The use according to claim 6, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4 and an average molecular weight of below 300,000.

11. The use according to claim 5, characterized in that the dextrane has an average molecular weight of below 40,000.

12. The use according to claim 5, characterized in that the dextrane has an average molecular weight of below 15,000.

13. The use according to claim 4, characterized in that gelatin is employed as polypeptide.

14. The use according to claim 4, characterized in that oxypolygelatin or gelatin succinate is employed as modified polypeptide.

15. The use according to claim 14, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 40,000.

16. The use according to claim 14, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 15,000.

17. The use according to claim 13, characterized in that said albumins are selected from the group consisting of human albumin, cleavage products of albumin, and recombinant human serum albumin.

18. The use according to any of claims 1, 2 or 3, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 1333 Pa (10 mm Hg).

19. The use according to any of claims 1, 2 or 3, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 3733 Pa (28 mm Hg).

20. The use according to any of claims 1, 2 or 3, characterized in that the proportion of the colloid-forming macromolecules is from 2 to 25% by weight, based on the total amount of the injectable aqueous solution.

21. The use according to any of claims 1, 2 or 3, characterized in that the proportion of the colloid-forming macromolecules is from 3 to 15% by weight, based on the total amount of the injectable aqueous solution.

22. The use according to any of the preceding claims, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 170 mmol/l and an anion proportion of from 100 to 170 mmol/l.

23. The use according to any of the preceding claims, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 150 mmol/l and an anion proportion of from 100 to 150 mmol/l.

24. The use according to claim 22 or 23, characterized in that part of the cation and/or anion concentration is replaced by a sugar or a natural or synthetic polyol.

25. The use according to claim 1, 2 or 3, characterized in that said injectable aqueous solution has an osmolarity of between 250 and 400 mOsmol/l.

26. The use according to claim 1, characterized in that said pharmaceutically active ingredient is contained in a proportion of from 0.5 to 25% by weight, based on the total amount of the injectable aqueous solution.

27. The use according to claim 1, characterized in that said pharmaceutically active ingredient is selected from the group consisting of slimming preparations/anorexiants, acidose therapeutics, amino acids (e.g., histidine) or

modified amino acids, analeptics/antihypoxemics, analgetics/antirheumatics, anthelmintics, antiallergics, antianemics, antiarrhythmics, antibiotics/antiinfectives, antidementives (nootropics), antidiabetics, antidotes, antiemetics/antivertiginosics, antiepileptics, antihemorrhagics (antifibrinolytics and other hemostatics), antihypertensives, antihypoglycemics, antihypotensives, anticoagulants, antimycotics, antiparasitics (internal), antiphlogistics, antitussives/expectorants, anti-arteriosclerosis agents, balneotherapeutics and agents for heat therapy, beta receptor and calcium channel blockers and inhibitors of the renin-angiotensin system, broncholytics/antiasthmatics, cholagogics and bile duct therapeutics, cholinergics, corticoids (internal), dermatics (internal), dietetics/nutrition therapeutics, diagnostics and agents for diagnostic preliminaries, diuretics, agents stimulating blood flow, withdrawal agents, enzyme inhibitors, enzyme preparations and transport proteins, fibrinolytics, geriatric agents, gout agents, influenza remedies, gynecologic agents, anti-hemorrhoidal agents (proctologics), hepatics, hypnotics/sedatives, hypophysis and hypothalamus hormones, regulatory peptides and their inhibitors, immunotherapeutics and cytokines, infusion and standard injection solutions, organ perfusion solutions, cardiacs, anti-caries and anti-parodontosis agents and other dental preparations, coronary agents, laxants, lipid depressants, neural therapeutics, gastro-intestinal agents, migraine remedies, mineral preparations, muscle relaxants, narcotics, parathyroid hormones/calcium-metabolic regulators/osteoporosis remedies, neuropathy preparations and other neurotropic agents, neurotransmitters (e.g., dopamine) or modified neurotransmitters, ophthalmics, otologics, Parkinson remedies and other remedies against extrapyramidal disturbances, psychopharmacons, sinusitis remedies, roborants/tonics, thyroid therapeutics, serums, immunoglobulins and vaccines, sexual hormones and their inhibitors, spasmolytics, platelet aggregation inhibitors, tuberculosis remedies, alterants, urologic agents, vein therapeutics, vitamins, wound treatment agents, cytostatics and metastasis inhibitors.

28. A kit comprising separately (a) colloid-forming macromolecules in an aqueous solution and (b) a pharmaceutically active ingredient.

29. The kit according to claim 28, characterized in that said pharmaceutically active ingredient is in a solid, liquid or dissolved form.

30. The kit according to claim 28, characterized in that said macromolecule is selected from the group consisting of polysaccharides, modified polysaccharides, polypeptides and modified polypeptides, and albumins.

31. The kit according to claim 30, characterized in that said polysaccharide is selected from the group consisting of cellulose, starch and dextrane.

32. The kit according to claim 30, characterized in that said modified polysaccharide is hydroxyethylstarch [poly(O-hydroxyethyl)starch].

33. The kit according to claim 32, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4.

34. The kit according to claim 32, characterized in that said hydroxyethylstarch has an average molecular weight of below 300,000.

35. The kit according to claim 32, characterized in that said hydroxyethylstarch has an average molecular weight of below 70,000.

36. The kit according to claim 32, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4 and an average molecular weight of below 300,000.

37. The kit according to claim 31, characterized in that the dextrane has an average molecular weight of below 40,000.

38. The kit according to claim 31, characterized in that the dextrane has an average molecular weight of below 15,000.

39. The kit according to claim 30, characterized in that gelatin is employed as said polypeptide.

40. The kit according to claim 30, characterized in that oxypolygelatin or gelatin succinate is employed as said modified polypeptide.

41. The kit according to claim 40, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 40,000.

42. The kit according to claim 40, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 15,000.

43. The kit according to claim 40, characterized in that said albumins are selected from the group consisting of human albumin, cleavage products of albumin, and recombinant human serum albumin.

44. The kit according to claim 28, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 1333 Pa (10 mm Hg).

45. The kit according to claim 28, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 3733 Pa (28 mm Hg).

46. The kit according to claim 28, characterized in that the proportion of the colloid-forming macromolecules is from 2 to 25% by weight, based on the total amount of the injectable aqueous solution.

47. The kit according to claim 28, characterized in that the proportion of the colloid-forming macromolecules is from 3 to 15% by weight, based on the total amount of the injectable aqueous solution.

48. The kit according to claim 28, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 170 mmol/l and an anion proportion of from 100 to 170 mmol/l.

49. The kit according to claim 28, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 150 mmol/l and an anion proportion of from 100 to 150 mmol/l.

50. The kit according to any of claims 48 or 49, characterized in that part of the cation and/or anion concentration is replaced by a natural or synthetic polyol.

51. The kit according to claim 28, characterized in that said injectable aqueous solution has an osmolarity of between 250 and 400 mOsmol/l.

52. The kit according to claim 28, characterized in that said pharmaceutically active ingredient is selected from the group consisting of slimming preparations/anorexiants, acidose therapeutics, amino acids (e.g., histidine) or modified amino acids, analeptics/antihypoxemics, analgetics/antirheumatics, anthelmintics, antiallergics, antianemics, antiarrhythmics, antibiotics/anti-infectives, antidementives (nootropics), antidiabetics, antidotes, antiemetics/antivertiginosics, antiepileptics, antihemorrhagics (antifibrinolytics and other hemostatics), antihypertensives, antihypoglycemics, antihypotensives, anticoagulants, antimycotics, antiparasitics (internal), antiphlogistics, anti-tussives/expectorants, anti-arteriosclerosis agents, balneotherapeutics and agents for heat therapy, beta receptor and calcium channel blockers and inhibitors of the renin-angiotensin system, broncholytics/antiasthmatics, cholagogics and bile duct therapeutics, cholinergics, corticoids (internal), dermatics (internal), dietetics/nutrition therapeutics, diagnostics and agents for diagnostic preliminaries, diuretics, agents stimulating blood flow, withdrawal agents, enzyme inhibitors, enzyme preparations and transport proteins, fibrinolytics, geriatric agents, gout agents, influenza remedies, gynecologic agents, anti-hemorrhoidal agents (proctologics), hepatics, hypnotics/sedatives, hypophysis and hypothalamus hormones, regulatory peptides and their inhibitors, immunotherapeutics and cytokines, infusion and standard injection solutions, organ perfusion solutions, cardiacs, anti-caries and anti-parodontosis agents and other dental preparations, coronary agents, laxants, lipid depressants, neural therapeutics, gastro-intestinal agents, mi-

graine remedies, mineral preparations, muscle relaxants, narcotics, parathyroid hormones/calcium-metabolic regulators/osteoporosis remedies, neuropathy preparations and other neurotropic agents, neurotransmitters (e.g., dopamine) or modified neurotransmitters, ophthalmics, otologics, Parkinson remedies and other remedies against extrapyramidal disturbances, psychopharmacons, sinusitis remedies, roborants/tonics, thyroid therapeutics, serums, immunoglobulins and vaccines, sexual hormones and their inhibitors, spasmolytics, platelet aggregation inhibitors, tuberculosis remedies, alterants, urologic agents, vein therapeutics, vitamins, wound treatment agents, cytostatics and metastasis inhibitors.

53. The kit according to any of the preceding claims, characterized by additionally containing a perfusor and/or infusion machine.

54. An injectable aqueous medicinal solution comprising at least one pharmaceutically active ingredient and colloid-forming macromolecules selected from the group consisting of polysaccharides or modified polysaccharides, polypeptides, modified polypeptides and albumins, characterized in that said pharmaceutically active ingredients are selected from the group consisting of slimming preparations/anorexiants, acidose therapeutics, amino acids (e.g., histidine) or modified amino acids, analeptics/antihypoxemics, analgetics/antirheumatics, anthelmintics, antiallergics, antianemics, antiarrhythmics, antibiotics/antiinfectives, antidementives (nootropics), antidiabetics, antidotes, antiemetics/antivertiginosics, antiepileptics, antihemorrhagics (antifibrinolytics and other hemostatics), antihypertensives, antihypoglycemics, antihypotensives, anticoagulants, antimycotics, antiparasitics (internal), antiphlogistics, antitussives/expectorants, anti-arteriosclerosis agents, balneotherapeutics and agents for heat therapy, beta receptor and calcium channel blockers and inhibitors of the renin-angiotensin system, broncholytics/antiasthmatics, cholagogics and bile duct therapeutics, cholinergics, corticoids (internal), dermatics (internal), dietetics/nutrition therapeutics, diagnostics and agents for diagnostic preliminaries, diuretics, agents stimulating blood flow, withdrawal agents, enzyme inhibitors, enzyme preparations and transport proteins, fibrinolytics, geriatric agents,

gout agents, influenza remedies, gynecologic agents, anti-hemorrhoidal agents (proctologics), hepatics, hypnotics/sedatives, hypophysis and hypothalamus hormones, regulatory peptides and their inhibitors, immunotherapeutics and cytokines, infusion and standard injection solutions, organ perfusion solutions, cardiacs, anti-caries and anti-parodontosis agents and other dental preparations, coronary agents, laxants, lipid depressants, neural therapeutics, gastro-intestinal agents, migraine remedies, mineral preparations, muscle relaxants, narcotics, parathyroid hormones/calcium-metabolic regulators/osteoporosis remedies, neuropathy preparations and other neurotropic agents, neurotransmitters (e.g., dopamine) or modified neurotransmitters, ophthalmics, otologics, Parkinson remedies and other remedies against extrapyramidal disturbances, psychopharmacons, sinusitis remedies, roborants/tonics, thyroid therapeutics, serums, immunoglobulins and vaccines, sexual hormones and their inhibitors, spasmolytics, platelet aggregation inhibitors, tuberculosis remedies, alterants, urologic agents, vein therapeutics, vitamins, wound treatment agents, cytostatics and metastasis inhibitors.

55. The injectable aqueous medicinal solution according to claim 54, characterized in that said polysaccharide is selected from the group consisting of cellulose, starch and dextrane.

56. The injectable aqueous medicinal solution according to claim 54, characterized in that said modified polysaccharide is hydroxyethylstarch [poly(O-hydroxyethyl)starch].

57. The injectable aqueous medicinal solution according to claim 54, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4.

58. The injectable aqueous medicinal solution according to claim 54, characterized in that said hydroxyethylstarch has an average molecular weight of below 300,000.

59. The injectable aqueous medicinal solution according to claim 54, characterized in that said hydroxyethylstarch has an average molecular weight of below 70,000.

60. The injectable aqueous medicinal solution according to claim 54, characterized in that said hydroxyethylstarch has a degree of substitution, DS, of < 0.4 and an average molecular weight of below 300,000.

61. The injectable aqueous medicinal solution according to claim 54, characterized in that the dextrane has an average molecular weight of below 40,000.

62. The injectable aqueous medicinal solution according to claim 54, characterized in that the dextrane has an average molecular weight of below 15,000.

63. The injectable aqueous medicinal solution according to claim 54, characterized in that gelatin is employed as said polypeptide.

64. The injectable aqueous medicinal solution according to claim 54, characterized in that oxypolygelatin or gelatin succinate is employed as said modified polypeptide.

65. The injectable aqueous medicinal solution according to claim 64, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 40,000.

66. The injectable aqueous medicinal solution according to claim 64, characterized in that said oxypolygelatin and gelatin succinate have an average molecular weight of below 15,000.

67. The injectable aqueous medicinal solution according to claim 63, characterized in that said albumins are selected from the group consisting of human albumin, cleavage products of albumin, and recombinant human serum albumin.

68. The injectable aqueous medicinal solution according to claim 54, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 1333 Pa (10 mm Hg).

69. The injectable aqueous medicinal solution according to claim 54, characterized in that said colloid-forming macromolecules have a colloid-osmotic pressure in aqueous solution of > 3733 Pa (28 mm Hg).

70. The injectable aqueous medicinal solution according to claim 55, characterized in that the proportion of the colloid-forming macromolecules is from 2 to 25% by weight, based on the total amount of the injectable aqueous solution.

71. The injectable aqueous medicinal solution according to claim 54, characterized in that the proportion of the colloid-forming macromolecules is from 3 to 15% by weight, based on the total amount of the injectable aqueous solution.

72. The injectable aqueous medicinal solution according to claim 54, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 170 mmol/l and an anion proportion of from 100 to 170 mmol/l.

73. The injectable aqueous medicinal solution according to claim 54, characterized in that said injectable aqueous solution additionally has a cation proportion of from 100 to 150 mmol/l and an anion proportion of from 100 to 150 mmol/l.

74. The injectable aqueous medicinal solution according to claim 54, characterized in that part of the cation and/or anion concentration is replaced by a natural or synthetic polyol.

75. The injectable aqueous medicinal solution according to claim 54, characterized in that said injectable aqueous solution has an osmolarity of between 250 and 400 mOsmol/l.

76. The injectable aqueous medicinal solution according to claim 54, characterized in that said pharmaceutically active ingredient is contained in a proportion of from 0.5 to 25% by weight, based on the total amount of the injectable aqueous solution.

77. An injectable ready medicament comprising the injectable aqueous medicinal solution according to any of claims 54 to 76.

78. The injectable aqueous medicinal solution according to claim 58, characterized in that part of the cation and/or anion concentration is replaced by a natural or synthetic polyol.

79. The injectable aqueous medicinal solution according to claim 58, characterized in that said injectable aqueous solution has an osmolarity of between 250 and 400 mOsmol/l.

80. The injectable aqueous medicinal solution according to claim 58, characterized in that said pharmaceutically active ingredient is contained in a proportion of from 0.5 to 25% by weight, based on the total amount of the injectable aqueous solution.

81. The injectable aqueous medicinal solution according to claim 58, characterized in that said pharmaceutically active ingredient is selected from the group consisting of slimming preparations/anorexiants, acidose therapeutics, amino acids (e.g., histidine) or modified amino acids, analeptics/antihypoxemics, analgetics/antirheumatics, anthelmintics, antiallergics, antianemics, antiarrhythmics, antibiotics/antiinfectives, antidementives (nootropics), antidiabetics, antidotes, antiemetics/antivertiginosics, antiepileptics, antihemorrhagics (antifibrinolytics and other hemostatics), antihypertensives, antihypoglycemics, antihypotensives, anticoagulants, antimycotics, antiparasitics (internal), antiphlogistics, antitussives/expectorants, antiarteriosclerosis agents, balneotherapeutics and agents for heat therapy, beta receptor and calcium channel blockers and inhibitors of the renin-angiotensin system, broncholytics/antiasthmatics, cholagogics and bile duct therapeutics, cholinergics, corticoids (internal), dermatics (internal), dietetics/nutrition therapeutics, diagnostics and agents for diagnostic preliminaries, diuretics, agents stimulating blood flow, withdrawal agents, enzyme inhibitors, enzyme preparations and transport proteins, fibrinolytics, geriatric agents, gout agents, influenza remedies, gynecologic agents, antihemorrhoidal agents (proctologics), hepatics, hypnotics/sedatives, hypophysis and hypothalamus hormones, regulatory peptides and their inhibitors, immunotherapeutics and cytokines, infusion and standard injection solu-

tions, organ perfusion solutions, cardiacs, anti-caries and anti-parodontosis agents and other dental preparations, coronary agents, laxants, lipid depressants, neural therapeutics, gastro-intestinal agents, migraine remedies, mineral preparations, muscle relaxants, narcotics, parathyroid hormones/calcium-metabolic regulators/osteoporosis remedies, neuropathy preparations and other neurotropic agents, neurotransmitters (e.g., dopamine) or modified neurotransmitters, ophthalmics, otologics, Parkinson remedies and other remedies against extrapyramidal disturbances, psychopharmacons, sinusitis remedies, roborants/tonics, thyroid therapeutics, serums, immunoglobulins and vaccines, sexual hormones and their inhibitors, spasmolytics, platelet aggregation inhibitors, tuberculosis remedies, alterants, urologic agents, vein therapeutics, vitamins, wound treatment agents, cytostatics and metastasis inhibitors.

82. An injectable ready medicament comprising the injectable aqueous medicinal solution according to any of claims 58 to 81.